

SIMULIIDAE (DIPTERA, NEMATOCERA) FROM NEW GUINEA, WITH THE
DESCRIPTION OF ONE NEW SPECIES.

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(Twenty-three Text-figures.)

[Read 26th November, 1947.]

INTRODUCTION.

Three species of Simuliidae have been described from New Guinea, all by Enderlein (1922, 1936), from specimens collected by Biro in 1898 and 1900. Each species was assigned to a different genus by Enderlein, but Smart (1945) included all three in the genus *Simulium* Latreille. One of these species may now be regarded as a synonym of *S. ornatipes* Skuse, a species known to be widely distributed in Australia, and here recorded for the first time from New Guinea. A new species of *Simulium* is described, found breeding with *S. ornatipes* at Port Moresby. No adults of either species were collected but were obtained from pupae kept on moist cotton-wool.* Also included are translations of the original descriptions of Enderlein's two species and an attempt is made to clarify their systematic position.

SIMULIUM ORNATIPES Skuse.

SKUSE, F. A., 1890.—PROC. LINN. SOC. N.S.W., (2) 5: 632.

TONNOIR, A. L., 1925.—Bull. ent. Res., 15: 232.

DRUMMOND, F. H., 1931.—J. R. Soc. W. Aust., 18: 6.

Synonymy: *Chelocnetha biroi* Enderlein, G., 1936. *Sitzber. naturf. Freunde*, 1936: 121.

Male and female types placed in either Budapest or Berlin Museum.

Type Locality: Specimens stated to come from Sydney, Australia, 24.11.1900 (see discussion below), collected by L. Biro.

Types: Although Tonnoir (1925) re-examined Skuse's syntype series and selected a lectotype male and allotype female, only the female is labelled as such. These specimens are lodged in the Australian Museum, Sydney.

Type Locality: Darling River, New South Wales.

A revision of the specimens used by Skuse has been carried out by Tonnoir and the immature stages described by Drummond from Western Australian material. Enderlein created a new genus, *Chelocnetha*, with genotype *C. biroi* for specimens, stated to be from New Guinea in the description of the genus, and from Sydney, Australia, in the description of the species, and without reference to the original material it is impossible to say from which of these places the specimens actually came, as the collector visited both regions. Smart (1945) transferred this species to the genus *Simulium*, and now, after examining Enderlein's original description, it is obvious that *S. biroi* is a synonym of *S. ornatipes*. Fortunately, any confusion which could have arisen from Enderlein's geographic error can now be obviated, as the species is known to occur in both places.

Distribution: Specimens have been collected in Western Australia, South Australia, New South Wales, and Queensland. Port Moresby, New Guinea (Lee and Wharton, June, 1947), is a new record, larvae and pupae being found attached to the under surface of stones in a small, fairly rapidly moving stream about 30 feet above sea-level.

* The pupae, which were collected on the 6th July, 1947, during the morning, were immediately placed on moist cotton wool in small tins. No adults had emerged by the following day, when the tins were transported by air from Port Moresby to Sydney, New South Wales. When the tins were opened on the 9th July, several adults had emerged and died. The pupae were then kept at a fairly constant temperature (75°F.). Further adults emerged during the following two days.

SIMULIUM OCLATA (Enderlein).

ENDERLEIN, G., 1936.—*Sitzber. Ges. naturf. Freunde*, 1936: 121. (*Pselaphochir oculata*.)
 SMART, J., *Trans. R. ent. Soc. Lond.*, 95: 493.

Synonymy: *Pselaphochir oculata*, Enderlein, 1936. (Smart, in the world list of Simuliidae, regards *Pselaphochir* as synonymous with *Simulium*.)

Types: Presumably the male and female type specimens are in either the Budapest or Berlin Museum.

Type Locality: Sattleburg, Huon Gulf, New Guinea.

DISTINCTIVE CHARACTERS.

The description of this species is quite inadequate, but the most obvious characters which may be of use in identification are the unusually large upper facets in the male eye, the shape and relative length of the hind tibiae and first tarsi in both sexes, the absence of claws, and the absence of bright scales or hairs on the second abdominal tergite. No mention is made of any pale area on the first hind tarsi, a character which is of importance in the remaining New Guinea species.

The translation of Enderlein's original generic and specific descriptions is:

"*Pselaphochir*, n. gen."

"*Type*: *P. oculata*, n. sp. New Guinea."

"*Male and Female*: Female claws toothless. Metatarsus of hind leg of male flattened and fusiformly broadened. First and third hind tarsi in male and female with two extraordinarily long hairs arising on the outer surface at the apex, each hair as long or longer than the second tarsus. Macrommatium (upper area of the eye) of the male with unusually large facets, diameter of which is somewhat greater than the diameter of the antennal flagella segments. On the median line between the eyes of the male, a longitudinal row of long hairs."

"R and R₁ pubescent, RR (probably Rs) with very short pubescence, in the female Sc is also pubescent."

"The genus *Morops* (Enderl. 1930) (type *M. pygmaea* Enderl. 1922, N.G.) is close to this genus, but differs in the small parallel-like metatarsus of the hind leg of the male and in the sharp angle at the end of the second-third of the hind tibia. The two remarkably long hairs at the tip of the first and the third fore tarsi occur also in the same way in *Morops*."

"*Pselaphochir oculata*, n. sp."

"*Female*."

"*Head*: Black with light grey bloom and short, metallic-yellow pubescence. Frons about one and a half times as long as it is broad posteriorly, and about three times as long as it is broad anteriorly."

"*Thorax*: Dull black, with golden-yellow pubescence, particularly on the top. *Abdomen*: Dull brown, the base slightly brighter in colour. The last three segments black and rather smooth; pubescence yellowish, slightly so on the top but denser on the sides; halteres metallic yellow, stem dark brown. *Legs*: Brown, base of hind tibia more or less bright yellow on the outside; first hind tarsus about four-fifths of the tibia, and about two-thirds of its width. *Wings*: Clear, veins brownish-yellow. Costa brown."

"*Male*."

"Body brown, abdomen dark brown. Mesonotum with dense golden-yellow hairs. Posterior margin of the tergites brighter (presumably than the female). Hind (posterior) bristles of the first tergite yellow-brown. Legs brown, tip of the femora, basal half of the tibiae with pale yellowish, flat-lying pubescence. Basal half of hind tibia pale yellowish. Halteres vivid metallic yellow, stem brown."

"Body Length: Male, 2.25 mm.; Female, 1.75-2.25 mm. Wing Length: 2.5-2.75 mm."

"N.G. (Sattleburg, Huon Gulf), Nov., 1898. Male and Female, L. Biro."

"*Type*: Museum—Budapest and Berlin."

Distribution: Sattleburg, Huon Gulf, New Guinea. This species has not yet been rediscovered.

SIMULIUM WILHELMLANDAE Smart.

SMART, J., 1944.—*Proc. R. Ent. Soc. Lond.*, (B) 13: 132.

ENDERLEIN, G., 1922.—*Konowia*, 1: 70. (*Wilhelmia pygmaea*.)

Synonymy: *Wilhelmia pygmaea*, Enderlein, 1922.

Morops pygmaea, Enderlein, 1930. *Arch. klassif. phylog. Ent.*, 1: 93. (The name *wilhelm-landae* was given to this species by Smart in 1944 when he transferred it to *Simulium*, in which genus *pygmaea* is preoccupied.)

Types and Type Locality: No record of where the type male, collected in "New Guinea, Kaiser Wilhelmland", is lodged. If still in existence it is probably in either the Budapest or Berlin Museum.

DISTINCTIVE CHARACTERS.

Though the description, based on a single male specimen, is not complete, this species should be easily recognized. The bright brown-yellow antennae and the bright ochreous yellow first two abdominal tergites are sufficient to separate this form from known New Guinea or Australian species. It should be noted that the first hind tarsi are mainly yellow.

The translation of Enderlein's original description follows:

"*Wilhemia pygmaea*, n. sp."

"New Guinea, Kaiser Wilhelmland. One male collected by Hollsong."

"*Male*. Eyes reddish-black. Clypeus grey-black with yellowish outstanding pubescence. Palpi black. Antennae bright brown-yellow."

"*Thorax*: Dull, brown-black, mesonotum with sparse yellow pubescence and with traces of smoothness in the middle (probably a rubbed specimen!). Scutellum dark brown. Metanotum dull black. *Abdomen*: Dull black, slightly smooth above on the sides; pubescence sparse and very short. First and second tergites bright yellow ochre, the long hairs of the first tergite also bright yellow ochre. Halteres large, vivid rust-yellow."

"*Legs*: Coxae grey-brown, fore coxae brown yellow. Trochanter brown-yellowish. Femora dark brown, the hind femur flattened and broadly spindle-shaped. Tibiae dark brown, basal fifth bright yellow ochre; fore tibia a very little flattened and broadened, the remainder considerably flattened and broadened, the hind tibia in such a way that a pronounced, almost slightly angular, convexity is formed on the outer margin of the basal half. Tarsi dark brown, the first hind tarsi except for the apical third bright yellow ochre, and with strikingly long and thin, single, outstanding hairs which may be three times as long as the cross-section of the tarsi. First fore tarsus cylindrical, about four-fifths of the length of the tibia: first hind tarsus small, parallel, very slightly flattened and broadened, less than half the breadth of the tibia at the broadest part, and about three-quarters of the length of the tibia."

"*Claws* untoothed—short and fine."

"*Wings* clear, veins C, Sc, and R bright yellow-brown."

"Body length: 1.2 mm. Wing length: 1.3 mm."

Distribution: Merely recorded from New Guinea, Kaiser Wilhelmland. This species has not as yet been rediscovered.

SIMULIUM PAPUENSIS, n. sp.

Types: Pinned holotype female and allotype male, together with one pinned female paratype in the Macleay Museum, University of Sydney. Morphotype larva and pupa, mounted on slides, larval and pupal specimens in alcohol, and one female and two male paratypes mounted on slides, also in the Macleay Museum. One female and one male paratype, pupae and larvae, in the Queensland Institute of Medical Research.

Type Locality: Jackson Strip, Port Moresby, New Guinea (Lee and Wharton, June, 1947.)

DISTINCTIVE CHARACTERS.

This species belongs to an Australasian group of the genus *Simulium* characterized particularly by the presence of a patch of scales on the membranous (prealar) area behind the mesothoracic spiracle. Characters which distinguish *S. papuensis* from Australian members of the group are: (i) *Adult*: The antennae mainly dark; the hind tibia slightly angulated in both sexes, but more accentuated in the male; abdomen with dense silver (sometimes appearing light golden) scales on the posterior margin of the first, and complete covering of similar scales on the second tergite; and the tarsal claws with a small basal tooth in both males and females. (ii) *Pupa*: The dendroid respiratory organs. (iii) *Larvae*: The frontoclypeus with longitudinal pigmented dark band; the pupal gill spots; and each lobe of the anal gills with several finger-like processes.

DESCRIPTION.

Female. Length 2.0-2.3 mm. Wing 2 mm.

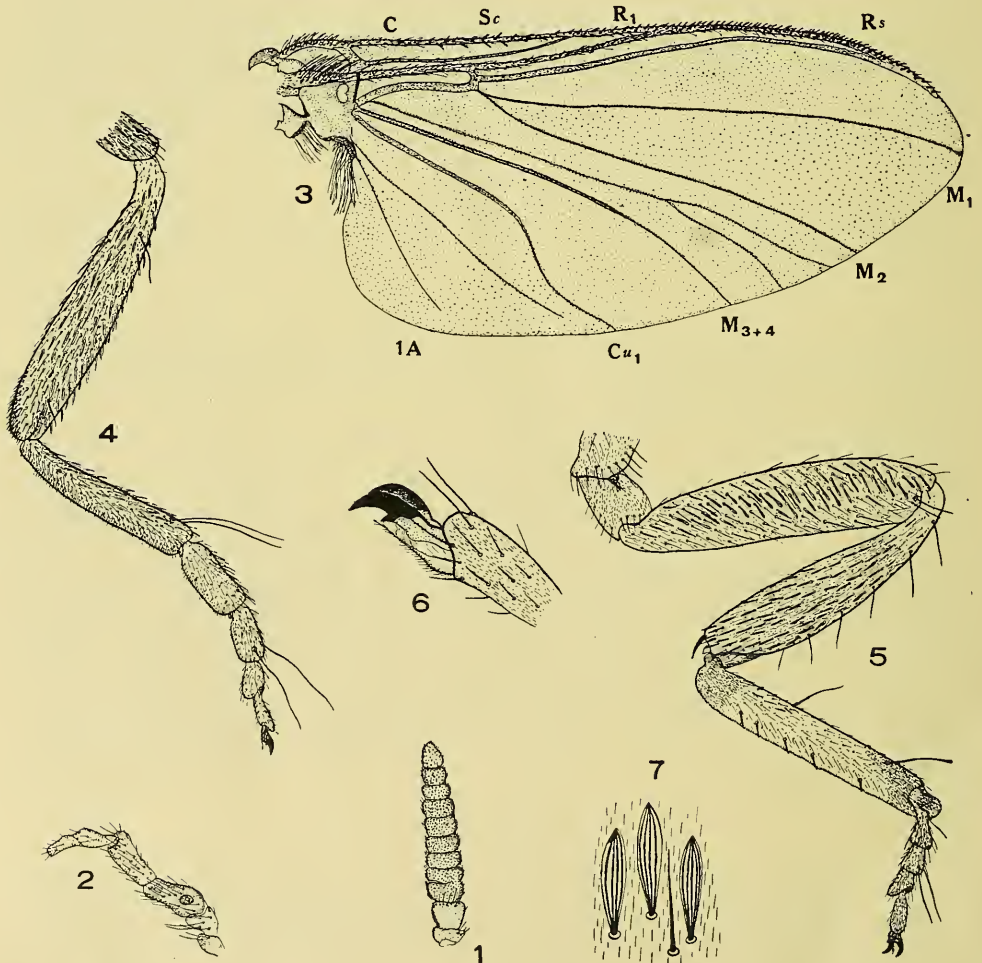
Head: The frons, vertex and occiput are dull black and covered with a silver-grey pubescence, the frons between one-quarter and one-third of the maximum width of the head, and about one and a half times as long as wide. The antennae (Text-fig. 1) are composed of eleven segments, of which the basal two and the base of the third are light brown, the remainder being dark brown to black with a fine grey pubescence. There are five segments in the palpi, the basal two small, the third large, slightly

less than twice as long as wide, the fourth not as broad as the third and a little shorter, the fifth longer than the third, but comparatively slender, more than four times as long as broad (Text-fig. 2). The buccal armature is similar to that figured for the male (Text-fig. 9).

Thorax: The mesonotum is black, with scattered fine golden scales. The pleura are bare and dull black, except for a patch of light golden scales on the membranous (prealar) area behind the mesothoracic spiracle, a group of similar scales on the propleuron, and a small group of bristles, which are dark at the roots but may appear pale distally, on the upper mesepimeron. The scutellum has a row of long, black bristles along its posterior margin and scattered golden scales on its dorsal surface. The halteres have dark brown to black stems and cream knobs.

Legs (Text-figs. 4 and 5): The legs are mainly dark brown to black, but in all legs the tibiae are light brown basally and the first hind tarsi have a very broad, light brown, median band, leaving only narrow apical and basal dark brown bands.

Most of the hairs on the legs are short and dark brown, but on the outer surface of the hind tibia there is a basal zone of dense light (usually golden) hairs. In addition, numerous spindle-shaped striated scales (Text-fig. 7) are to be found on the



Text-figs. 1-7.—*Simulium papuensis*, n. sp. Female. 1, Antenna, $\times 300$. 2, Palpus, $\times 300$. 3, Wing, $\times 45$. 4, Foreleg, $\times 70$. 5, Hindleg, $\times 70$. 6, Tarsal claws of hind leg, $\times 300$. 7, Striated scales on femora and tibiae, $\times 300$.

femora, tibiae and sometimes on the first tarsi. Finally, on the fore and hind tarsi there are a number of extremely elongated hairs—an apical pair on the anterior surface of the first and third fore tarsi, a single hair towards the apex of the first hind tarsus and a pair towards the apex of the third hind tarsal segments, the hairs on the hind tarsi not as long as those on the fore tarsi.

The hind tibiae are slightly angulated and a pair of stout spurs are present at the apex of all tibiae. In the hind leg the calcipalus (Text-fig. 5) is well developed, about three-quarters of the width of the first hind tarsus, but wider than the second. The pedisulcus is also pronounced.* The tarsal claws bear a small basal tooth (Text-fig. 6).

The relative lengths of the legs and leg segments are shown in the following table:

	Fore-leg, mm.	Mid-leg, mm.	Hind-leg, mm.
Total length	2.02	1.83	2.30
Coxa	0.25	0.23	0.27
Trochanter	0.14	0.16	0.16
Femur	0.45	0.47	0.57
Tibia	0.50	0.45	0.54
Tarsus I	0.32	0.25	0.50
Tarsus II	0.14	0.09	0.08
Tarsus III	0.10	0.06	0.06
Tarsus IV	0.05	0.05	0.05
Tarsus V	0.07	0.07	0.07

Thus the hind tibia is slightly shorter than the femur but a little longer than the corresponding first tarsal segment.

Wings (Text-fig. 3): At the base of the wing the veins are rather dark, the membrane slightly clouded, and the small basal cell† is absent. Macrotrichia are present on the upper surface of the basal section of the radius, continued along R_1 , but here, in addition, there are a number of peg-like setae, similar to those found on the costa. Macrotrichia are absent on the upper surface of R_s , except at the junction with the costa, but present on the undersurface of R_s . $M_{3+4}‡$ is sinuous.

Abdomen: The most striking features are the dense silver scales on the posterior margin of the first tergite and the complete covering of similar scales on the second tergite. The remaining tergites have silver scales over a dense black pubescence. From an obstructed view of the ventral surface it appears likely that there again the black pubescence predominates with scattered silver scales present, particularly abundant on the sides of the second and third segments. The colour of the scales on the abdomen changes with the direction and intensity of the light and they may appear light golden.

Male. Length 1.8–2.1 mm. Wing 2 mm.

Head: The clypeus is dull black with scattered silver-grey pubescence, the antennae and palpi are as in the female. The upper facets of the eye are extremely large, as large as the antennal sclerite, and with a diameter greater than that of the basal antennal segments (Text-fig. 8). Between the eyes there is a row of fairly strong hairs. The bucco-pharyngeal armature is as figured (Text-fig. 9).

* The calcipalus is an apical extension on the inner side of the first hind tarsus, and the pedisulcus a notch on the dorsal side of the second hind tarsal segment.

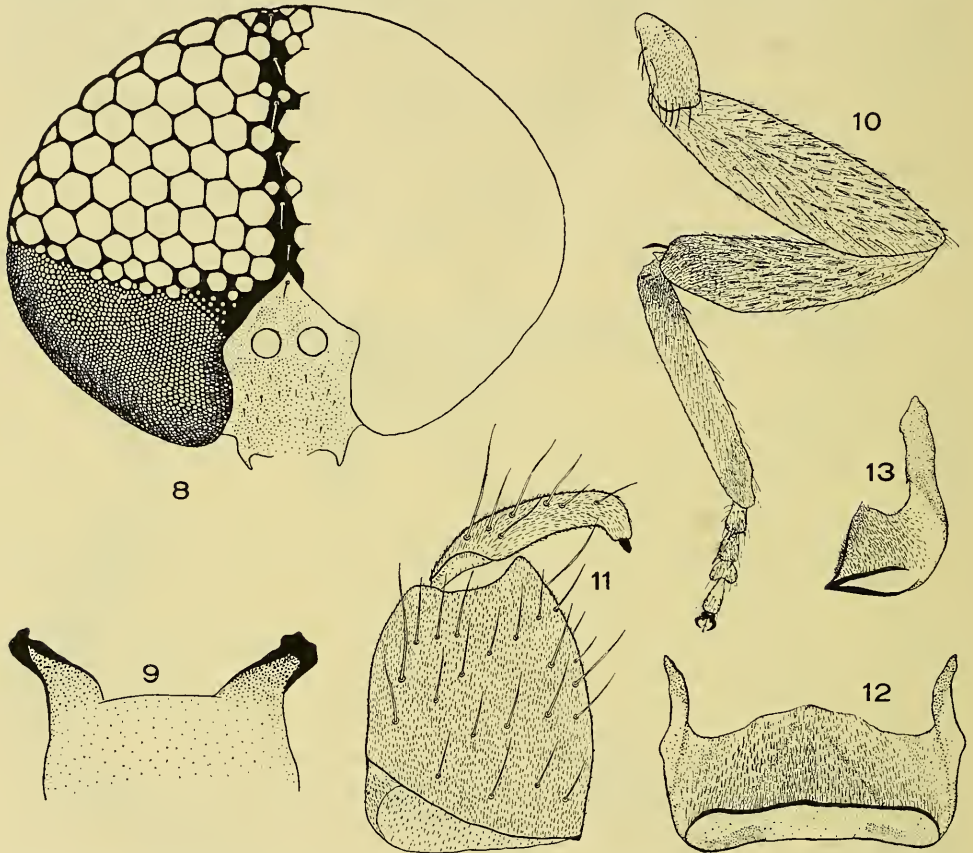
† In certain *Simuliid* genera, e.g., *Prosimulium* and *Cnephia*, a distinct small cell is present at the base of M , M_{3+4} and Cu_1 .

‡ Following the notation used for the Nematocera by Tillyard (1927), but equivalent to Cu_2 of Smart, Edwards and others.

Thorax: The arrangement of the scales, hairs and bristles on the mesonotum, scutellum and pleurae are as in the female, but the upper mesepimeral bristles appear more golden and are never completely dark.

The wings and halteres are similar to those of the female.

Legs: The main point of difference between the male and female legs lies in the much more angular hind tibia (Text-fig. 10) of the male. The fore tibia is again slightly longer than its corresponding femur and the tarsal claws bear a basal tooth.



Text-figs. 8-13.—*Simulium papuensis*, n. sp. Male. 8, Head, dorsal view, $\times 60$. 9, Bucco-pharyngeal armature, $\times 300$. 10, Hindleg, $\times 70$. 11-13, Genitalia, $\times 300$. 11, Coxite and style. 12, Ventral plate, ventral view. 13, Ventral plate, lateral view.

Abdomen: The dense scales on the first two abdominal tergites and the scattered similar scales over a dense black pubescence on the remaining tergites are more golden than in the female.

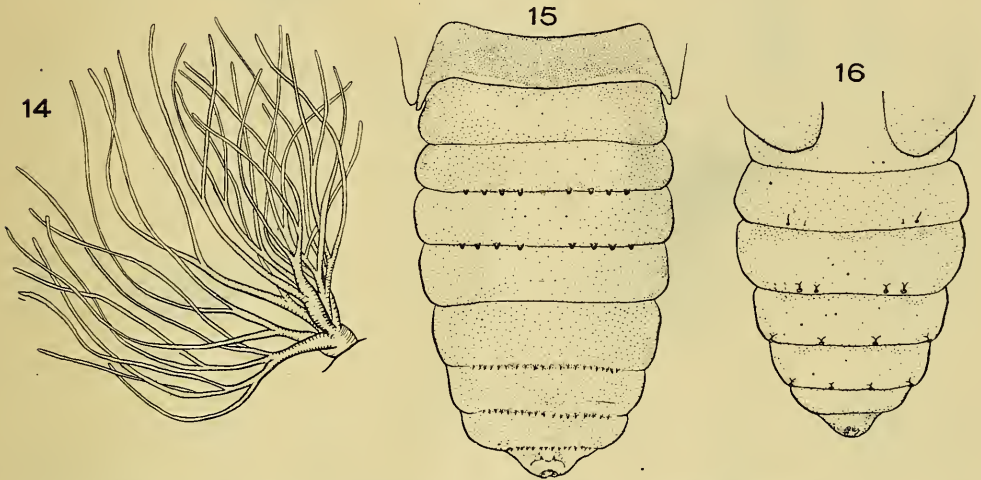
Genitalia: (Text-figs. 11, 12 and 13.) The style (clasper) is shorter than the coxite (sidepiece), about five times as long as broad and bearing a single short spine at the tip. The ventral plate (aedeagus, adminiculum) appears to be simple, with well-developed basal arms.

Pupa. Length about 3 mm., light brown in colour.

On each side of the mid-line of the thoracic notum there is a longitudinal line of three (in one specimen, two) fairly stout hairs, and behind the base of the pupal gills there are two hairs on each side, again arranged longitudinally. The respiratory organs (pupal horns) are composed of some thirty to forty rather rigid, fine filaments arising from five or six main trunks (Text-fig. 14). These main trunks are about equal

in size, each trunk branching several times, the whole organ having a shrub-like appearance.

On the abdomen there are a number of spines carried on the apical margins of the segments, both on the dorsal and ventral surface. On each side of the mid-dorsal line (Text-fig. 15) there is a row of four short, stout spines on the third and fourth segments and a row of 8-10 much finer spines on the sixth, seventh and eighth segments (these spines are carried on small chitinized plates and may appear to arise at the base of the segments). Ventrally (Text-fig. 16), on each side of the mid-line, there is a pair of unequal fine spines on the fourth segment, a pair of larger bifid spines on the fifth segment (in both the fourth and fifth segments the spines closely approximated and submedian in position), and two bifid, widely separated spines on the sixth and seventh segments. The terminal segment carries a pair of upwardly directed stout spines.



Text-figs. 14-16.—*Simulium papuensis*, n. sp. Pupa. 14, Respiratory organ, $\times 45$. 15, Abdomen, dorsal view, $\times 45$. 16, Abdomen, ventral view, $\times 45$.

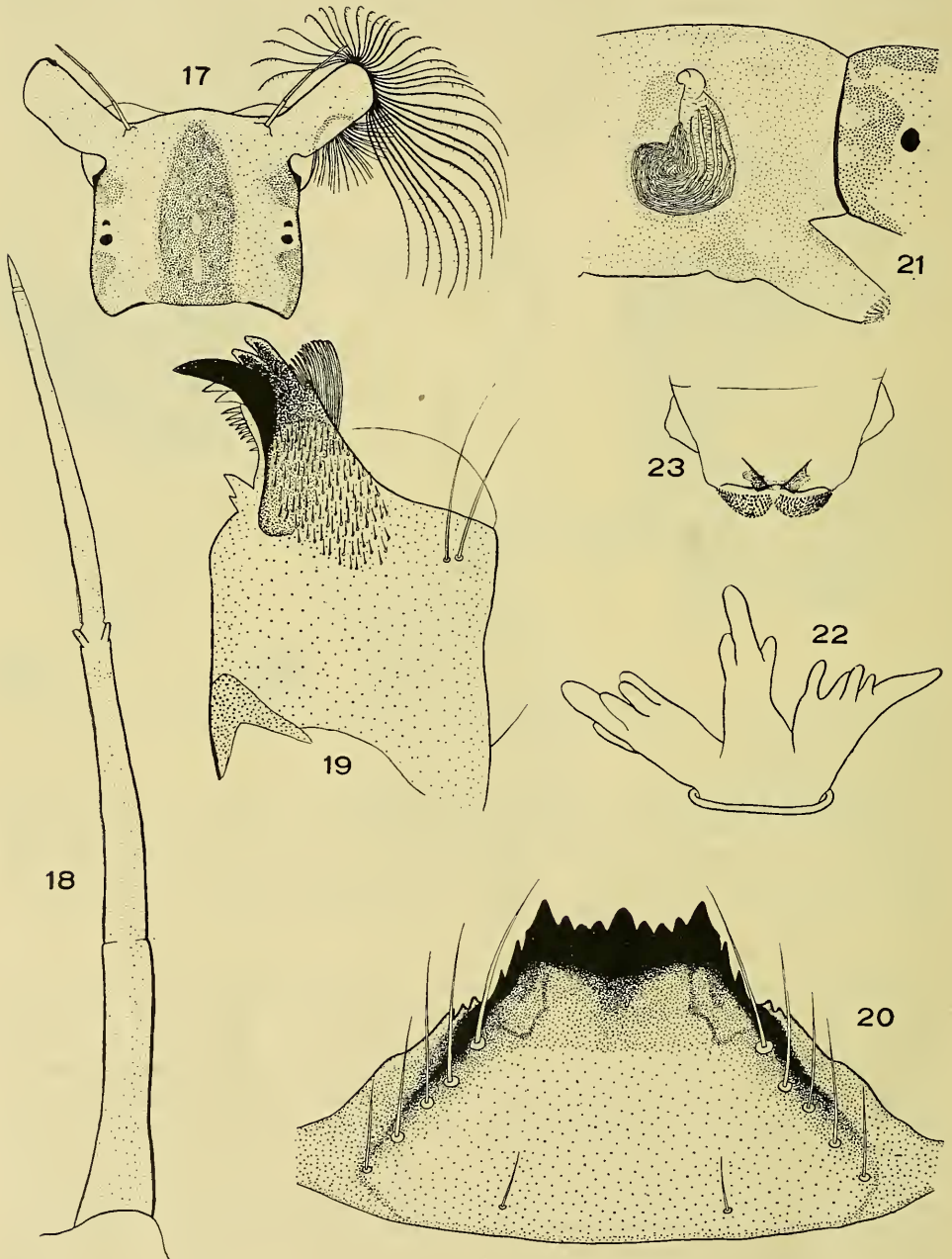
Cocoon.

Unfortunately the cocoons are not in good condition but appear to have a definite outline, with a complete flattened ventral surface which is applied to the support. There is a wide opening anteriorly, through which the anterior portion of the pupa, up to the base of the respiratory organs, protrudes. The texture of the cocoon is rather coarse, the individual threads being clearly visible.

Larva. Length 4.5 mm. General colour, grey.

Head: (Text-fig. 17.) The frontoclypeus is distinctly marked with a broad dark longitudinal band extending from the posterior margin of the head to beyond the level of the bases of the antennae. Along the mid-line two lighter spots are present on the band, the remainder of the head capsule showing pigmentation areas as illustrated (Text-figs. 17 and 21). The antennae, which are approximately equal in length to the base of the feeding-brushes, are composed of four segments, the joint between the first and second segments not complete. The first segment of the antenna is four-fifths of the length of the second, which is slightly shorter than the third segment (Text-fig. 18). The feeding-brushes bear about thirty-five long bristles, which carry subsidiary minute hairs on the distal half. The mandible (Text-fig. 19) has one large and two shorter strongly chitinized teeth and a small, blunt, strongly chitinized projection on its outer surface. From the concave surface of the large tooth protrude two fairly large and eight subsidiary teeth which are lightly chitinized. Finally, below these, there is a single weakly chitinized bifid tooth. The mentum

(Text-fig. 20) has a terminal row of nine teeth, the central and outermost tooth on each side (which bears a lateral projection) being the largest. Behind these, on each side, there are two teeth, also strongly chitinized, followed by three weakly chitinized teeth and an oblique row of five stout bristles. Towards the posterior margin, in the submedian area, there is a smaller bristle on each side.



Text-figs. 17-23.—*Simulium papuensis*, n. sp. Larva. 17, Head, dorsal view, $\times 35$. 18, Antenna, $\times 300$. 19, Mandible, $\times 300$. 20, Labium, $\times 300$. 21, Pupal gill spot, $\times 45$. 22, Anal gills, $\times 70$. 23, Anal armature, $\times 45$.

Thorax: The pigmentation of the thorax varies, but is always better developed on the ventral than on the dorsal surface. The gill spots (Text-fig. 21) of mature larvae are fairly large, almost triangular in outline.

Abdomen: A pair of basal tubercles are present on the ventral surface of the last abdominal segment. The anal gills (Text-fig. 22) are trilobed, the outer lobes with five to nine and the middle with three to five finger-like processes. The anal circlet is composed of some eighty to one hundred rows of hooks, each row with thirteen or fourteen stout bifid hooks. Anal armature as illustrated (Text-fig. 23).

Biology.

The larvae and pupae were collected on the undersurface of stones in a small, fairly rapidly running stream about thirty feet above sea-level. Together with *S. papuensis* were found the larvae and pupae of *S. ornatipes* Skuse.

Distribution: Port Moresby and Milne Bay,* New Guinea.

DISCUSSION.

The group to which I have ascribed *S. papuensis* has not as yet been defined by M. J. and I. M. Mackerras, who will do so in the near future when publishing the results of their discoveries in Queensland. These include the finding of two new species, closely allied to *S. papuensis* and to *S. faheyi* Taylor (1927), a species described from material collected in North Queensland. Although Enderlein's description of *S. wilhelmlandae* and *S. oculata* are quite inadequate, it is apparent that they closely resemble *S. papuensis*, and it is suggested that they also may belong to the group.

The pupa of *S. papuensis* is the first species in the genus *Simulium* to be recorded as having dendroid respiratory organs, which have hitherto been used as a generic character, typical only of the genera *Prosimulium* Roubaud and *Cnephia* Enderlein. With the exception of the pupal respiratory organs, *S. papuensis* is a typical *Simulium*.

KEY TO NEW GUINEA SPECIES OF SIMULIUM.

Males and Females.

Although it is not possible to formulate a simple, sound key to the New Guinea species an attempt is made below to tabulate the most obvious characters differentiating the species.

1. Femora with extensive yellow markings, tibiae with median yellow markings *S. ornatipes* Skuse
Femora completely dark and only the bases of the tibiae with yellowish markings 2
2. Claws of male and female with a small basal tooth; first two abdominal tergites with dense silver scales, (antennae with basal segments light brown, remainder dark brown; hind tibia of male distinctly angulated, female hind tibia slightly angulated; first hind tarsus with broad median pale band) *S. papuensis*, n. sp.
Claws of male simple; first two abdominal tergites bright yellow ochre (female unknown, antennae bright brown yellow; hind tibia angulated; first hind tarsus except for apical third bright yellow ochre) *S. wilhelmlandae* Smart
Claws of male and female simple; abdomen dull brown, the last three tergites black and rather smooth, pubescence yellowish (colour of antennae, shape of hind tibia and colour of first hind tarsus not stated) *S. oculata* Enderlein

ACKNOWLEDGEMENTS.

Dr. I. M. Mackerras and Mrs. M. J. Mackerras, of the Queensland Institute of Medical Research, have been extremely helpful in providing notes on their new species, in lending specimens and in comparing New Guinea and Australian specimens. Encouragement, advice and criticism by Mr. D. J. Lee and Mr. A. R. Woodhill, of the Zoology Department, University of Sydney, has been stimulating and of great assistance in the preparation of this paper.

* *Note*: Two females, collected by I. M. Mackerras at Milne Bay, New Guinea, in February, 1943, have been examined and show no significant morphological differences from *S. papuensis* apart from being larger (length 2.5 mm., wing 2.4 mm., foreleg 2.5 mm., midleg 2.3 mm., and hindleg 2.8 mm). It is possible that the immature stages or males may show differences, but until such time as the life history is known these specimens may be considered as *S. papuensis*.

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WAHLENBERGIA LIMENOPHYLAX.

AN UNINTENTIONAL ORTHOGRAPHIC ERROR.

By N. LOTHIAN,

Botanical Gardens, Adelaide, South Australia.

[Read 26th November, 1947.]

In my paper on the Australasian species of *Wahlenbergia*, published in the PROCEEDINGS OF THE LINNEAN SOCIETY OF NEW SOUTH WALES, vol. lxxi, 1946, 233, the above species unfortunately appeared under the name *W. limnophalyx*. This was an unintentional orthographic error, for which I alone am responsible, and was due to my inability to consult certain notes and the type material at the time of final checking.

The correct name of the species is *Wahlenbergia limenophylax* Lothian, with which name the type material has been inscribed. I trust that this alteration will be accepted under Article 70 of the International Rules of Botanical Nomenclature (1935).

The natural habitat of this species is on the tops of sea cliffs and adjoining areas at Lord Howe Island. Such cliffs overlook the harbour. The specific epithet in its correct form means a harbour watcher, and refers to this habitat. The epithet "limnophalyx" would give one the impression that the plant inhabits swamps or marshes, and would be quite misleading, so that correction of my mistake appeared necessary.